The Behavior Analyst 1992, 15, 31–41 No. 1 (Spring)

Social Behavior as Discriminative Stimulus and Consequence in Social Anthropology

Bernard Guerin
University of Waikato

A behavior analysis is provided for three topics in social anthropology. Food, social relations, and ritual behaviors can enter into contingencies both as functional consequences and as discriminative stimuli for the reinforcement of behaviors through generalized social consequences. Many "symbolic" behaviors, which some social anthropologists believe go beyond an individual material basis, are analyzed as the latter. It is shown how the development of self-regulation to bridge remote consequences can undermine a group's generalized social control. It is also shown that rituals and taboos can be utilized to maintain generalized social compliance, which in turn can maintain both the community's verbal behavior and other group behaviors that bridge indirect and remote consequences.

Key words: social behavior, verbal behavior, self-regulation, symbolic behavior, social anthropology, generalized social consequences

Many psychologists make assumptions based purely on Western populations. Behavior analysis has avoided this by using animal comparisons in its early stages and only later dealing with specifically human behaviors. More recently, behavior analysts have extended behavioral principles by dealing with some of the social anthropology literature. At present, however, most of these extensions have made comparisons only between behavior analysis and Harris' cultural materialism (Biglan, Glasgow, & Singer, 1990; Glenn, 1988, 1989; Lloyd, 1985; Malagodi & Jackson, 1989; Malott, 1988; Vargas, 1985), which seems to be the form of social anthropology most closely aligned with behavior analysis.

The work of Harris (1974, 1979; Ross, 1980) describes the material bases of culture, arguing, for instance, that birth rates in different cultures are a function of protein and carbohydrate in the diet and that innovation in some societies is related to the rainfall for producing food. Harris' principle of infrastructural determinism states that structural and superstructural phenomena, such as social practices, ideology, and the arts, are ultimately derived from material infrastructural events, that is, from producing, reproducing, and surviving (Harris, 1979).

Cultural materialism is clearly consistent with behavior analysis in its principles, and I do not dispute this. We act in the environment through contingencies, which involve material events both as discriminative stimuli and as functional consequences that maintain the behaviors. Even the most abstract behaviors can be analyzed into material contingencies.

Most behavior analysts seem to agree at present that, although contingencies for humans might have special properties (Hayes, 1989a; Sidman, 1986), the contingency principles are the same as those found with animals (Buskist & Degrandpre, 1989). This difference between properties and principles seems a minor one, but it does, in fact, suggest new avenues for behavior analysis within social anthropology. Two behavior analysts (Glenn, 1989; Malott, 1988), for example, have suggested that special properties of verbal behavior, and rule-governed behavior (Hayes, 1989b) in particular, can help extend Harris' cultural materialism even though no new principles of behavior are invoked. Glenn (1989) argued that verbal reports are not as epiphenomenal as Harris presumed, whereas Malott (1988) showed that the infrastructural contingencies are often in-

I thank Jody Kashden, Vicki Lee, Wendy Gunthorpe, and several reviewers for very constructive comments. This work was partially supported by a James Cook University MRG grant.

Correspondence about this article should be addressed to Bernard Guerin, Ph.D., Dept. of Psychology, University of Waikato, Private Bag, Hamilton, New Zealand.

direct-acting or ineffective and therefore need rule-governed mediation if they are to be contacted.

I suggest another extension that increases the scope of behavior analysis within social anthropology as well as psychology. Many social anthropologists argue that there are "symbolic" behaviors that cannot be analyzed into material bases as Harris suggests (Barrett, 1984; Friedman, 1974; Keesing, 1981). Such social anthropologists have only looked for material consequences rather than discriminative stimuli in their analyses and are therefore led to posit cognitive or idealistic bases for symbolic behaviors when they find no obvious consequences. I show that these symbolic behaviors can be analyzed as discriminative stimuli for generalized social consequences and are therefore consistent with both cultural materialism and behavioral principles.

CULTURE AND SYMBOLIC BEHAVIOR: NECESSARILY COGNITIVE AND IDEALISTIC?

Harris argues against a number of views that suggest that culture is somehow more than its material base. It was Durkheim (1914), a sociologist, who influenced anthropology (see Harris, 1980), sociology, and psychology (Farr & Moscovici, 1984) in promoting such views. Durkheim argued for a collective conscience, which consists of ideas shared by members of a community but that somehow exist independently of the individual members:

> The collective conscience is the highest form of psychic life, since it is the consciousness of consciousness. Being placed outside and above individual and local contingencies, it sees things only in their permanent and essential aspects, which it crystallizes into communicable ideas. (Durkheim, 1914, p. 444)

Although this paper deals only with social anthropology, similar views can be found within psychology and sociology. In social psychology they appear as "social constructions" and "social representations" (Berger & Luckmann, 1967; Farr & Moscovici, 1984; Gergen & Davis, 1985; Moscovici, 1982). In sociology the same idea of collective consciences appears as symbolic activities, symbolic interaction, and significant symbols (Mead, 1922; Stryker & Statham, 1985). These related views all suggest that there are behaviors (often nominalized as social knowledge) that go beyond material events because there do not appear to be any obvious consequences maintaining them. For example, gifts are often exchanged (Mauss, 1966), even though the gifts do not function as reinforcers. They are then said to be symbolic and not to rely on material reinforcers.

I do not defend such views in this paper because I agree with Harris that such views are idealistic and therefore remain obscure. I argue that some of these symbolic phenomena *appear* to go beyond individual material functioning because they involve contingencies with special properties. They do not differ in principle from any other behaviors; they still depend upon contingencies and infrastructural determinism. Put into a different form these views become amenable to a behavior analysis.

The aim of this paper, then, is to show that although there are material principles to account for human behavior, there are special properties that make some human social behaviors seem different from animal social behaviors. These human differences can be explained, however, without new principles of behavior. I use three examples from anthropology to do this: food and eating, social relations, and rituals and taboo.

ANALYZING SYMBOLIC SOCIAL BEHAVIOR

The basic principle for social behavior analysis of other cultures, like for other analyses, is the contingency. We need to analyze the stimulus contexts that discriminate the contingencies, the behaviors involved, and the consequences that function to form response classes and maintain the social behaviors. This much is standard for a behavior analysis and is consistent with infrastructural determinism.

The scope of the term "social behavior" has been disputed within behavior analysis (Hyten & Burns, 1986; Parrott, 1986). For the purposes of this paper,

only behaviors that have other persons being the discriminative stimulus or mediating the consequences need be considered. The contingencies of human social behavior have some special properties, however, as was recognized by Skinner (1957): "Behavior which is effective only through the mediation of other persons has so many distinguishing dynamic and topological properties that a special treatment is justified and, indeed, demanded" (p. 2).

There are two points in particular that are important to the analyses made in this paper. The first of these is the ubiquity and flexibility of generalized social consequences; the second is the role of contextual control with generalized social consequences.

Properties of Generalized Social Consequences

A large amount of human behavior is maintained by social consequences; in particular, much of our verbal behavior is maintained in this way (Lee, 1984; Skinner, 1957). Rather than being maintained by social consequences that are specific to particular responses, much social behavior is maintained by generalized social consequences, such as the various forms of "approval" (Skinner, 1957, p. 54). These are reactions from other people that have been discriminative of various positive reinforcements in the past.

One property of such social consequences is that because they are secondary consequences, the behaviors they maintain can have very arbitrary relations with the environment (Hayes & Hayes, 1989) in a way that direct consequences usually cannot. For example, the tacts "dog" and "chien" bear no topographical relation to the stimulus conditions of their use (the presence of a dog) nor their reinforcing consequences (other names would do just as well), yet these words can be consistently and effectively used. They are maintained through generalized social consequences, such as approval for correct usage in the presence of a dog or avoidance of generalized social punishment.

A second property of these social consequences is that the forms of approval can be used for many different behaviors. The same generalized approval, for example, can reinforce saying "dog" in the presence of a dog and saying "meow" in the presence of a cat. The effect of this is that features of the person mediating the approval can become discriminative stimuli even though they bear no relationship between the act and the original discriminative stimulus. This in turn means that the social behavior can become detached from the original environmental conditions with the approving person becoming the only discriminative stimulus.

A third property of social consequences is that they are usually intermittent and variable because a mediating person is unlikely to reinforce continuously and reliably, as can electronic equipment. The effect of this is that many different behaviors can occur without there seeming to be any obvious functional consequences. This is especially so if the consequences are also generalized and likely to function for many different social behaviors or if there is generalized avoidance of social punishment.

This property means that when generalized social consequences are maintaining behavior, it appears as if the stimulus context fully determines the behavior. If you have a certain number of people looking up at a building, this stimulus context appears to be the only variable controlling the behavior of other people looking (Milgram, Bickman, & Berkowitz, 1969). There do not *appear* to be any functional consequences maintaining the behavior because the social consequences are highly variable, intermittent, and common to many other situations. This would not be the case if someone were to immediately give food or money contingent on looking up or if there was a giant gorilla climbing the building.

These three properties of social consequences have meant that social anthropologists and social psychologists have been able to ignore consequences and still predict some human social behavior. The consequences are a function-

al part of the contingencies, however, and need to be taken into account for a proper analysis (Guerin, 1991).

Contextual Control of Social Behavior

The second point about socially mediated consequences is that the same objects and events can enter into contingencies as antecedent stimulus contexts, as consequences, or as both. If there is an exchange of money, for example, the money could be analyzed as a secondary reinforcing consequence maintaining the social interaction (whatever this might have been). But it could also have been a stimulus context of a contingency having nothing to do with the consequences of the money but with social approval. The person in this case might just as well have been given some flowers that would become worthless within a few days.

This is important because it is in these cases that the money or the mediating behavior is referred to as symbolic. The money is not functioning to reinforce the behavior of the person receiving it, but rather, as a discriminative stimulus for generalized approval or punishment. The money might be thrown away and the approval or punishment contingency still remain. It is suggested that this will frequently occur with generalized social consequences because the properties discussed earlier readily allow arbitrary social behaviors to become discriminative stimuli.

It is because of such symbolic acts as these that social anthropologists have criticized Harris—because people can throw the seemingly obvious reinforcer away and yet the behavior continues. But I will argue that such examples illustrate social behaviors as discriminative stimuli rather than as consequences.

Social consequences must ultimately have an infrastructural basis. Both cultural materialism and behavior analysis require that for generalized approval or other social consequences to be effective they must be discriminative of more direct reinforcers, even if these are delayed. The point, though, is that what seem to be the obvious reinforcers in a contingency might not be functioning in this way, so the criticisms based on these examples are not valid.

With these special properties for analyzing social behavior, I examine three major areas of social anthropology: food and eating, social relations, and taboo and ritual. No new principles of behavior have been invoked, so the analyses are consistent with both Harris' infrastructural determinism and behavior analysis.

FOOD AND EATING

Because of the importance of food and nutrition to all people and food and nutrition's common power to act as direct strengthening consequences, it is no wonder that they play a central role in most cultures. Because food can regulate the social power in a group of people (whoever controls the food can control the people), it is also no wonder that food comes to play a major role in symbolic behaviors, such as feasting or the breaking of bread (Douglas, 1970). Food can not only be analyzed as a direct reinforcing consequence, but also as an antecedent stimulus context for behaviors maintained by generalized social consequences.

The anthropology of food and its ramifications have been analyzed in two different ways. Some anthropologists have described the ecological aspects of food: how much food can be produced given the resources of the environment; how much food a person needs; how different groups maintain a nutritional balance; and how the ecological balance determines population size, various customs related to food, and migration (Lee & DeVore, 1968; Rappaport, 1984; Schwimmer, 1973). The food in these analyses is considered to be a reinforcing consequence. The work of Harris (1979) fits in well here when analyzing the material basis of contingencies connected with food.

Other anthropologists have concentrated on the religious, taboo, or symbolic aspects of food: how certain foods are not allowed to be eaten, how certain

ritual acts have to be carried out before eating the food, and how food can only be prepared in certain ways (Douglas, 1966; Steiner, 1956). They have also analyzed the ritual functions of sharing and exchanging food between people (Blau, 1964; Evans-Pritchard, 1940; Mauss, 1966; Sahlins, 1972; Schwimmer, 1973). According to the approach proposed here, these analyses deal with the maintenance of social compliance behaviors, with the food as part of the stimulus context, and with generalized social consequences as the maintaining consequences. The food in these cases might not function as a consequence at all.

These two different roles of food have been recognized before in anthropology. In Levi-Strauss' (1963) statement that "[W]hile in 1929, Radcliffe-Brown believed that interest was conferred upon animals and plants because they were 'eatable', in 1951 he saw clearly that the real reason for this interest lay in the fact that they are, if I may use the word, 'thinkable' " (p. 2), he suggests that food can be both a consequence ("eatable") and an antecedent stimulus context ("thinkable"). The behavior analyst does not see these as exclusive roles, though, as Levi-Strauss implies. Rather, food can act as both even on the same occasion.

These two facets show that food in a behavior analysis is more complex than just a primary reinforcer. Food sometimes appears to go beyond the material basis of behavior because it is not functioning as a consequence but as a stimulus context. Behavior analysis can provide an account of such cases without resorting to idealistic analyses.

POLITICS, THE FAMILY, AND SOCIAL RELATIONS

Social Behavior as Context and Consequence

Social interaction and social relations can also be analyzed both as consequences and as antecedent stimulus contexts. The behavior of one person can be a consequence for the behavior of another person, and it can also be a stimulus context for a contingency in which the functional consequences have nothing to do with the behaviors emitted.

For example, if someone said "Hello" to me I might reply with "Oh, hi there." My reaction and reply could act as a reinforcer, making that person more likely to say "Hello" in the future. My reply could also be a context for the other person in which many greeting behaviors have been reinforced in the past. In this way their "Hello" could be strengthened, even though my reaction and reply is not the effective consequence but a discriminative stimulus for generalized social reinforcers.

Such social interactions are often called symbolic acts (Barrett, 1984) or ritual social behaviors (Douglas, 1970) because they are not maintained by the obvious reaction from the other person. If I give you an olive branch the act is called symbolic because the branch is obviously not acting as a reinforcer. Like the examples in the discussion of food, such examples are thought by some social anthropologists to be irreducible to a material basis and hence evidence against cultural materialism.

From the behavior analytic perspective developed here, the symbolic acts or ritual social behaviors merely enter the contingency as stimulus contexts rather than as reinforcers. The effective reinforcers in the situation are likely to be generalized and intermittent and have nothing to do with the behavior itself. That is, any symbolic act might do just as well, and the specific act used could be an historical accident. A palm leaf could be given instead of an olive branch.

An Anthropological Example

To illustrate what has been said so far, in the analysis of social behavior as a context and as a consequence, consider the following scenario about events after a killing in a Nuer group of the Sudan. Because very little of the behavior is maintained by direct social consequences, I highlight the generalized social consequences maintaining the behaviors. The example is taken from Gluckman's

(1956) summary of Evans-Pritchard's (1940, p. 152) original account of the incident:

> These common local interests are represented by a category of arbitrators, who may be called upon to help settle disputes. The arbitrators are ritual experts who are called "men of the earth." They have no forceful powers of coercion. They cannot command men to do anything and expect them to obey; but they are political as well as ritual functionaries. . . .
>
> If the slayer resides near the home of the man he has killed, he will live in sanctuary with the "man of the earth" to avoid death at the hands of his victim's kin. The "man of the earth" will then negotiate between the two groups, and try to induce the deceased's kin to accept compensation. This they are bound in honour to refuse; but eventually they will yield when the "man of the earth" threatens to curse them. . . . [There are] tales of the dire effects of such a curse. (Gluckman, 1956, p. 15)

The "local interests" refer here to social contingencies with delayed or indirect consequences that require some self-control, or in this case social control, to bridge the contingencies (Malott, 1988). One advantage of being in groups is that they can assist individuals in contacting remote contingencies. Two people cooperating can accomplish tasks that a person acting alone could not.

"The arbitrators are ritual experts" means that the arbitrators use symbolic acts or verbal behaviors to control the behavior of others. Because they are socially mediated, symbolic acts and verbal behaviors have unreliable contingent relations and need supplementing. Merely saying "Do this" does not automatically control the behavior of another person.

In this case the supplementary control is not physical force: "They have no forceful powers of coercion. They cannot command men to do anything and expect them to obey," meaning that they do not rely on their own social behavior as a direct physical consequence to get compliance with their verbal behavior. That is, they do not physically touch, hit, or stone the other person. Evans-Pritchard (1940) would have described the arbitrators as "police" rather than "ritual experts" if they had supplemented their verbal behavior in such a way.

The arbitrator then tries to "negotiate between the two groups, and try to induce the decreased's kin to accept compensation." So the "man of the earth" attempts to bridge a remote group contingency by using his verbal behavior, but the contingencies between commanding and doing are unreliable, as would be expected from an analysis of verbal behavior (Malott, 1988). There appears, then, to be a lack of obvious physical consequences controlling the behavior of the deceased's kin. In this sense it might be argued that there are no material consequences to be analyzed here and that cultural materialism cannot show a function to the restraint of the deceased's kin.

There seem to be many verbal and symbolic group contingencies operating, however, some in the form of verbalized rules of conduct (customs): "he will live in sanctuary"; "they are bound in honour to refuse"; "but eventually they will yield." The big question, then, which is left largely unanswered, is: What exactly maintains compliance with these customs and rules? Why do the deceased's kin not simply drag the slayer from the arbitrator's dwelling if the arbitrator's behavior is not the obvious effective consequence stopping them?

What is missing is the underlying basis of the social compliance. Evans-Pritchard (1940), through his whole analysis of the Nuer, only made a tentative link between social compliance and material events when he suggested an ecological or systems perspective (Douglas, 1980). The scenario suggests that the symbolic acts and verbal behaviors of the arbitrator are effective because they are stimulus contexts that have been discriminative of generalized social consequences in the past during other rituals, not because they are directly reinforcing or punishing. The previous rituals might have had no direct consequences at the time for the arbitrator or the social group, but they now help bridge the remote social contingencies.

So the answer to the question of why the deceased's kin did not simply raid the arbitrator's dwelling is twofold. At the level of systems or material ecology, the answer is that it is part of a delayed contingency that was gradually selected through group contingencies. A similar

effect could have been gained if the individuals involved (especially the kin) had developed self-control through their own verbal regulation (Riegler & Baer, 1989), although this might have played a role and not been reported by Evans-Pritchard because much of it would have been covert.

The second, more molecular answer as to why the deceased's kin did not simply raid the arbitrator's dwelling is that social compliance was effective in this group when the arbitrator's behavior was a discriminative stimulus. The behaviors of the deceased's kin during the incident, such as showing restraint, had presumably been reinforced in the past during symbolic rituals. But the important point is that the actual material reinforcers maintaining these behaviors might not be present at the time, but only exist as intermittent generalized social consequences. In this way the symbolic acts can appear to have no material basis.

We are given one more clue for the basis of social compliance: "when the 'man of the earth' threatens to curse them. . . . [There are] tales of the dire effects of such a curse." Two events occur here. First, the arbitrator uses verbal behavior to establish a threat. The power of this threat will again depend upon the previous conditioning history with the arbitrator's behavior as discriminative stimulus.

Second, there are other verbal behaviors (tales) that spell out the "dire effects" (verbally specified consequences) of noncompliance. Whether or not these dire consequences actually occur (Evans-Pritchard did not observe any examples) probably does not matter. The point is that if one can get repeated generalized compliance to verbal instructions, then subsequent verbal instructions can be arbitrary and detached from any direct material consequences and still be followed.

Compliance based on tales must in turn also be maintained because a verbally predicted event cannot function as a consequence to control contemporary behavior. Verbal predictions can only serve as antecedent contexts. If, for example, the arbitrator had a previous history of speaking the truth in other more innocuous tales, then the verbal threat might work in this murderous emergency. As we will see in the final section of this paper, the arbitrator could also gain compliance by instigating rituals and taboos for this specific occasion. To determine further how the tales were kept effective with this group would require an historical analysis, which cannot be done from the materials presented by Evans-Pritchard (1940).

RITUAL AND TABOO

We have seen that part of social control is gained through contextual discriminations maintained by generalized social consequences. It is because the forms of symbolic acts and verbal behaviors are not selected by direct contact with environmental contingencies that they can mediate so easily and flexibly in social behavior. In this way all sorts of "irrational" beliefs and behaviors can be maintained by a social group (Evans-Pritchard, 1976). As long as there is generalized social compliance maintained by some means or another, and this might be unrelated to its later use, the social control thus exercised will work just as well as if there were "rational," obvious consequences selecting the behavior. We do not need to resort to collective consciences to analyze this.

In rituals and taboos there is again the symbolic exercise of social control: It is the social contexts and generalized social consequences that are determining the ritual rather than any consequences of the ritual acts themselves. The acts being performed can be arbitrary and interchangeable so long as the generalized social consequences maintain them. In turn, the performance of rituals can further strengthen generalized social compliance.

This means that ritual behaviors and taboos should be more frequent for an individual when contingencies cannot be contacted alone, that is, when there are competing contingencies, only remote contingencies, or when individual self-regulation is not well developed. On a

group level they should be selected when there are clashes between the consequences for the group and the individual, or when the group faces a remote consequence. In this latter case, rituals provide social regulation to mediate delayed consequences, just as do environmental laws or laws regulating drug use.

Two examples will be given of rituals involving important or remote consequences. First, if Harris (1979) is correct about the ecological and dietary basis for not eating certain food types, this will be an extremely remote contingency, showing an effect only over many generations (Malott, 1988). These consequences alone would not sustain the verbal prohibitions, either for individuals or for groups, so ritualized forms of social control are needed. Hence, a large variety of rituals and taboos have evolved (been selected), providing discriminative stimuli for social consequences that can support the verbal prohibitions until the individual behaviors come under the control of the delayed contingencies.

As a second example, consider the changes in stimulus contexts and consequences when a member of one family marries someone from another family and goes to live with the new family. Many changes in long-term social consequences take place during such an event. Social relations with the original family become severed, and social relations with the new family take time to develop. In line with this, many rituals and taboos have evolved for such events. These rituals and taboos help bridge the delay between the old and the new social consequences, allow the new social relations to be shaped, and allow the long-term consequences to become supportive of the behaviors required with the new family (e.g., Evans-Pritchard, 1951).

The role of rituals in sustaining compliance with rules produces another interesting conclusion: The breakdown in traditional rituals, taboos, and religious observances over the past several decades has occurred through both the development of self-regulation in education and the weakening of family consequences. The development of verbal self-regulation has meant that the remote contingencies can be contacted by individuals without group maintenance through ritual and generalized social control. Good decisions can be made without consulting elders or praying in a church and receiving advice from a priest. The implication is that the development of science, education, and self-regulation has undermined traditional social behaviors and even compliance with the verbal behavior of communities.

The weakening of family consequences, our most important contingencies, such as those to do with food, social relations, and careers, is due to the lack of involvement family or social leaders have with individuals, compared to historical social structures. Anyone who can earn money can also gather food without relying on family members, making the long-term consequences maintained by family or group rituals no longer applicable. Most people would not even consider having their elders help maintain their life behaviors.

Taboos, in the anthropological literature, are often said to have two separate functions. The first is equivalent to what has been discussed so far: They serve as antecedent stimulus contexts for generalized social consequences. Like symbolic acts and ritual behaviors, taboos are useful for other group activities and, in the long run, are advantageous for group (rather than self-) regulation of behaviors related to delayed consequences.

The second function of taboos deals with events in life such as danger, the presence of blood, the handling of corpses, menstruation, childbirth, and the killing and gutting of animals. The first and second functions can be discerned from the following passage:

> And we find expressed in the same term, those of taboo, two quite separate social functions: (1) the classification and identification of transgressions (which is associated with, though it can be studied apart from, processes of social learning), and (2) the institutional localization of danger, both by the specification of the dangerous and by the protection of society from endangered, and hence dangerous, persons." (Steiner, 1956, p. 147)

This second function seems relevant to the classical conditioning of aversions and the minor phobias related to unpleasant and dangerous events. Similar occurrences can be found with vertigo, snake phobias, aversions to eating liver, and dirty objects (Douglas, 1966).

It is important to note that in the anthropological literature, social compliance has been implicated in handling such unpleasant and dangerous events, so the two functions of taboo cannot be totally separated, as Steiner (1956) went on to emphasize. That is, the use of taboos to maintain social compliance has been linked, but not fully clarified at an individual level, with the use of taboos in dealing with dangerous events. Behavior analysis can help provide the foundations for this by showing exactly how the danger taboos can be utilized for social control, as now follows.

As long as people have phobias and aversions, whatever their origin might be, the phobias and aversions can be used as an easy way to maintain social compliance for other ends. The suggestion is that phobias and aversions are like a low-cost form of motivation that can be used for the maintenance of group behaviors. Once a passive avoidance contingency is set up, it needs little energy to keep it going. Merely having nothing happen only slowly extinguishes the behavior. Socially mediated positive reinforcement and punishment, on the other hand, require regular actions from the mediator.

Given the problem of how groups are to maintain social compliance when its benefits are remote, variable, or indirect, it is no wonder that ritualized avoidance has been widely utilized for maintaining generalized social compliance. Less action is required by the group arbitrators.

The same argument can be made for adventitious consequences maintaining superstitious behavior. They require little maintenance in themselves once they have been initially strengthened, so they too can be utilized for social compliance purposes. The anthropological literature gives many examples of this (Evans-Pritchard, 1976). Once generalized social consequences have been effectively established, they can be used to maintain other behaviors that might be unconnected with the source of these consequences.

"[A]nthropology has known since Durkheim's time that rituals establish or enhance solidarity among those joining in their performance.... Yet we have much to learn about just *how* ritual creates this solidarity" (Rappaport, 1984, p. 347, italics in original). By working with anthropologists and their descriptions of different cultural groups, behavior analysts can provide some answers to Rappaport's problem.

CONCLUSION

In this paper I have argued that social behaviors that are analyzed as consequences can also be stimulus contexts discriminative of generalized social consequences. Generalized social consequences allow this to happen quite easily because they are flexible, can maintain arbitrary behaviors, and are intermittent.

In three areas of anthropology I have argued that symbolic acts or ritual behaviors can be analyzed in this fashion, consistent with behavior analysis and cultural materialism. Many social anthropologists who believe that symbolic acts and ritual behaviors are not reducible to a material basis have only looked for obvious material consequences of the acts and behaviors and have not considered them as discriminative stimuli for the less obvious generalized social consequences.

Similar foundations were found for food and eating, social relations, and ritual and taboo. The generalized social consequences they discriminate are used to maintain remote group contingencies. For example, the social compliance with verbal instructions gained through the regular ritual practices of Evans-Pritchard's "man of the earth" came in handy when there was a need to settle a dispute about a killing. This sort of settlement obviously involved delayed contingen-

cies for both parties because it was so serious.

In conclusion, some of the special human social behaviors can be analyzed quite readily without resorting to idealistic foundations. They can be based on currently understood principles of behavior but still show properties that are not found with other animals not specially trained. The same analyses can also be applied to similar views held by social psychologists and sociologists, although that is beyond the scope of this paper.

REFERENCES

Barrett, R. A. (1984). *Culture and conduct: An excursion in anthropology.* Belmont, CA: Wadsworth.

Berger, P. L., & Luckmann, T. (1967). *The social construction of reality.* Harmondsworth, Middlesex: Penguin.

Biglan, A., Glasgow, R. E., & Singer, G. (1990). The need for a science of larger social units: A contextual approach. *Behavior Therapy, 21,* 195–215.

Blau, P. (1964). *Exchange and power in social life.* New York: Wiley.

Buskist, W., & Degrandpre, R. J. (1989). The myth of rule-governed behavior. *Experimental Analysis of Human Behavior Bulletin, 7,* 4–6.

Douglas, M. (1966). *Purity and danger.* New York: Praeger.

Douglas, M. (1970). *Natural symbols.* Harmondsworth, Middlesex: Penguin.

Douglas, M. (1980). *Evans-Pritchard.* London: Fontana.

Durkheim, E. (1914). *The elementary forms of religious life.* London: Allen & Unwin.

Evans-Pritchard, E. E. (1940). *The Nuer.* Oxford: Clarendon Press.

Evans-Pritchard, E. E. (1951). *Kinship and marriage among the Nuer.* Oxford: Clarendon Press.

Evans-Pritchard, E. E. (1976). *Witchcraft, oracles, and magic among the Azande.* Oxford: Clarendon Press.

Farr, R. M., & Moscovici, S. (Eds.). (1984). *Social representations.* Cambridge: Cambridge University Press.

Friedman, J. (1974). Marxism, structuralism and vulgar materialism. *Man* (n.s.), *9,* 444–469.

Gergen, K. J., & Davis, K. E. (Eds.). (1985). *The social construction of the person.* New York: Springer Verlag.

Glenn, S. S. (1988). Contingencies and metacontingencies: Toward a synthesis of behavior analysis and cultural materialism. *The Behavior Analyst, 11,* 161–180.

Glenn, S. S. (1989). Verbal behavior and cultural practices. *Behavior Analysis and Social Action, 7,* 10–15.

Gluckman, M. (1956). *Custom and conflict in Africa.* Oxford: Basil Blackwell.

Guerin, B. (1991). Anticipating the consequences of social behavior. *Current Psychology: Research and Reviews, 10,* 131–162.

Harris, M. (1974). *Cows, pigs, wars & witches: The riddles of culture.* Glasgow: Fontana.

Harris, M. (1979). *Cultural materialism.* New York: Random House.

Harris, M. (1980). Historical and ideological significance of the separation of social and cultural anthropology. In E. B. Ross (Ed.), *Beyond the myths of culture: Essays in cultural materialism* (pp. 391–407). New York: Academic Press.

Hayes, S. C. (1989a). Nonhumans have not yet shown stimulus equivalence. *Journal of the Experimental Analysis of Behavior, 51,* 385–392.

Hayes, S. C. (Ed.). (1989b). *Rule-governed behavior: Cognition, contingencies, and instructional control.* New York: Plenum Press.

Hayes, S. C., & Hayes, L. J. (1989). The verbal action of the listener as a basis for rule-governance. In S. C. Hayes (Ed.), *Rule-governed behavior: Cognition, contingencies, and instructional control* (pp. 153–190). New York: Plenum Press.

Hyten, C., & Burns, R. (1986). Social relations and social behavior. In H. W. Reese & L. J. Parrott (Eds.), *Behavior science: Philosophical, methodological, and empirical advances* (pp. 163–183). Hillsdale, NJ: Erlbaum.

Keesing, R. M. (1981). *Cultural anthropology: A contemporary perspective* (2nd ed.). New York: Holt, Rinehart & Winston.

Lee, R. B., & DeVore, I. (Eds.). (1968). *Man the hunter.* Chicago: Aldine.

Lee, V. L. (1984). Some notes on the subject matter of Skinner's *Verbal behavior* (1957). *Behaviorism, 12,* 29–40.

Levi-Strauss, C. (1963). The bear and the barber. *Journal of the Royal Anthropological Institute, 43,* 1–11.

Lloyd, K. E. (1985). Behavioral anthropology: A review of Marvin Harris' *Cultural materialism. Journal of the Experimental Analysis of Behavior, 43,* 279–287.

Malagodi, E. F., & Jackson, K. (1989). Behavior analysts and cultural analysis: Troubles and issues. *The Behavior Analyst, 12,* 17–33.

Malott, R. W. (1988). Rule-governed behavior and behavioral anthropology. *The Behavior Analyst, 11,* 181–204.

Mauss, M. (1966). *The gift.* London: Routledge & Kegan Paul.

Mead, G. H. (1922). A behavioristic account of the significant symbol. *Journal of Philosophy, 19,* 157–163.

Milgram, S., Bickman, L., & Berkowitz, L. (1969). Note on the drawing power of crowds of different sizes. *Journal of Personality and Social Psychology, 13,* 79–82.

Moscovici, S. (1982). The coming era of representation. In J.-P. Codol & J. P. Leyens (Eds.), *Cognitive analyses of social behavior* (pp. 115–150). The Hague: Martinus Nijhoff.

Parrott, L. J. (1986). On the differences between

verbal and social behavior. In P. N. Chase & L. J. Parrott (Eds.), *Psychological aspects of language* (pp. 91–117). Springfield, IL: Charles C. Thomas.

Rappaport, R. A. (1984). *Pigs for the ancestors.* London: Yale University Press.

Riegler, H. C., & Baer, D. M. (1989). A developmental analysis of rule-following. In H. W. Reese (Ed.), *Advances in child development and behavior* (Vol. 21, pp. 191–219). New York: Academic Press.

Ross, E. B. (Ed.). (1980). *Beyond the myths of culture: Essays in cultural materialism.* New York: Academic Press.

Sahlins, M. (1972). *Stone age economics.* London: Tavistock.

Schwimmer, E. (1973). *Exchange in the social structure of the Orokaiva.* London: C. Hurst.

Sidman, M. (1986). Functional analyses of emergent verbal classes. In T. Thompson & M. D. Zeiler (Eds.), *Analysis and integration of behavioral units* (pp. 213–245). Hillsdale, NJ: Erlbaum.

Skinner, B. F. (1957). *Verbal behavior.* Englewood Cliffs: Prentice Hall.

Steiner, F. (1956). *Taboo.* Harmondsworth, Middlesex: Penguin.

Stryker, S., & Statham, A. (1985). Symbolic interaction and role theory. In G. Lindzey & E. Aronson (Eds.), *Handbook of social psychology, Vol. I. Theory and methods* (pp. 311–378). New York: Random House.

Vargas, E. A. (1985). Cultural contingencies; A review of Marvin Harris' *Cannibals and kings. Journal of the Experimental Analysis of Behavior,* 43, 419–428.